in hot alcohol and ether and in chloroform, and melting at 321° to 323° F. By boiling with hydrochloric acid it split up into five distinct substances: (1) Galactose, (2) phosphoric acid, (3) cerebrininic acid, (4) amido-cerebrininic acid, and (5) a nitrogenous water-soluble principle.— *Archiv fur Experimental Pathologie und Pharmakologie,* 1902, Band xlviii. p. 73.

PEDIATRICS.

UNDER THE CHARGE OF

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The Leucocyte Count in the Diagnosis of Diseases of Children.—GEORGE DOUGLAS HEAD (*Archives of Pediatrics,* April, 1902, p. 253) calls attention to the value of leucocyte counts in the differential diagnosis of certain diseases of early life. From the conclusions of various observers it is probable that in healthy infants a mild degree of leucocytosis occurs during the first year of life, and this is somewhat diminished during the second year; but beyond the age of two years in healthy children the count is not different from that of adults. From one to two years the count may be of considerable value if one is careful to exclude the leucocytosis of digestion; but even at this age the chief value of the procedure must be to assist in the identification of such diseases as are characterized by a diminution rather than an increase in the leucocytes. This group of diseases includes typhoid fever, influenza, measles, malarial fever, and miliary tuberculosis, and, perhaps, tuberculous meningitis. Beyond two years of age the leucocyte count in diseases of children is as invariable and as fixed as in diseases of adult life.

In typhoid fever in children the low leucocyte count is constant, being raised above the normal figure only in the presence of complications. If in a case of suspected typhoid fever in a child the count is over 10,000, the diagnosis of uncomplicated typhoid fever cannot be entertained, and a complication is to be looked for whether the symptoms indicate it or not. But the count is of most value when the clinical symptoms have narrowed the diagnosis to a choice between typhoid fever, on the one hand, and meningitis, osteomyelitis, appendicitis, or some other infection; for in all the latter group there is an increase of the white blood count.

In adults typhoid hemorrhage or perforation is followed by a prompt rise in the number of leucocytes. There are, however, numerous exceptions to the rule, and practically the knowledge furnished by the white count is this: if, in a case of typhoid fever, symptoms pointing to perforation or hemorrhage are observed, a rise in the leucocytes strengthens the evidence that perforation or hemorrhage exists. While none of the cases in the series of children's cases collected by the author was thus complicated, it is to be presumed that the rule in adult cases would be followed.

Appendicitis in children, as in adults, is accompanied by a well-marked leucocytosis. The count is thus of value in differentiating appendicitis from attacks of abdominal pain from renal calculus, gallstones, acute intestinal obstruction, and typhoid fever, all of which have a normal or diminished count. From acute gastritis, acute nephritis, or acute enterocolitis, all of which cause leucocytosis, differentiation could not be made. Again, when the symptoms of appendicitis give no clue to the course the disease is pursuing the leucocyte count is often of valuable assistance in following the course of the inflammation. No conclusions, however, can be drawn concerning the severity of a given case, unless successive counts have been made from the outset of the disease.

In lobar pneumonia a pronounced leucocytosis is encountered. An average of the cases under five years gives 41,090, while for cases over five years the average count is 26,800. The number of complicated cases is too small to give satisfactory conclusions.

In cases of pneumonia simulating typhoid, malaria, or influenza, a high leucocytosis rules out these three common infections, but is of no value in distinguishing it from cerebro-spinal meningitis or appendicitis.

Only three cases of bronchopneumonia are included in the series, but from these it is probable that while leucocytosis accompanies the disease it is not as pronounced as pneumonia.

Meningitis (five cases) shows a pronounced leucocytosis, ranging from 14,200 to 40,600, which appears early in the disease and continues till death. Complications do not modify it. In the diagnosis between meningitis and uncomplicated typhoid fever the count, as already indicated, is almost, if not absolutely, diagnostic. Between meningitis and hysteria the count in two cases seen by the author has been diagnostic (6300 and 9000). As between meningitis and brain tumors, one case of the latter disease examined by the writer gave a count of 5500 in the second week of severe symptoms.

In diagnosis between tuberculous and non-tuberculous forms of meningitis no cases of children have been reported, and the counts in adults are conflicting.

In influenza in children it is probable that a normal or reduced count occurs in the uncomplicated cases, as in adults. The test will, therefore, be of value in differentiation from meningitis, and also in establishing the presence of a complication like lobar pneumonia.

In diphtheria the count is of little practical value. In measles, however, the count is normal or below during the whole course of the disease, but complications, such as bronchopneumonia, severe bronchitis, or otitis media, cause a leucocytosis in some cases.

German measles, according to Cabot, shows no leucocytosis, and mild scarlatina, according to Turk, shows nearly a normal number of leucocytes. If the infection is severe and the diagnosis lies between scarlatina and measles, leucocytosis would point to the former, a normal count to the latter.

In scarlet fever leucocytosis begins a day or so before the rash appears, reaches its height about the time of the full development of the exanthem, and falls with the fading of the rash, or may persist some days longer.

In variola, as already proven by Rick, no leucocytosis occurs prior to the formation of the vesicles; with their appearance the count rises, and reaches its height as the exudate becomes purulent. In very mild cases no increase occurs during the course of the disease. These statements probably apply to children, as well as adults. Since the initial rash of variola sometimes resembles that of scarlet fever, the white count might give valuable information early in the disease.

OBSTETRICS.

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Diagnosis by Vaginal Examination.—In the *Journal of Obstetrics of the British Empire*, November, 1902, STEPHENSON contributes an excellent paper upon this subject. He calls attention to the fact that with proper care, vaginal examinations are attended with but little danger, and that important knowledge regarding parturition can be obtained by this procedure only.

Although the usual belief is that the occiput is seldom upon the right side and anterior, or upon the left side and posterior, Stephenson finds this is erroneous. More frequently than ordinary statistics would lead us to believe, he has found the occiput anterior and upon the right or posterior and upon the left.

He also calls attention to the fact that in a pelvis of average dimensions and with a pelvic floor and perineum uninjured and not relaxed, it is impossible to touch the promontory of the sacrum. Many books and articles upon the subject of vaginal examination assert that the sacrum can readily be palpated including the promontory, an assertion which experience does not prove. If the observer finds that upon vaginal examination his fingers come readily in contact with the promontory of the sacrum he must conclude that the pelvis is considerably contracted.

In order to accurately appreciate what is meant by vaginal examination, Stephenson urges that the sort of vaginal examination made should be definitely stated, whether it is the ordinary examination or whether it be an examination made under partial anæsthesia or with pressure especially adapted to reach the higher points of the posterior pelvic wall. He refers in his paper to what is termed "ordinary vaginal examination."

Again, he calls attention to the fact that a frequent error is made in stating that upon vaginal examination as ordinarily made both fontanelles can be reached. This is never the case, but, on the contrary but one fontanelle